

ASSIGNMENT - 4

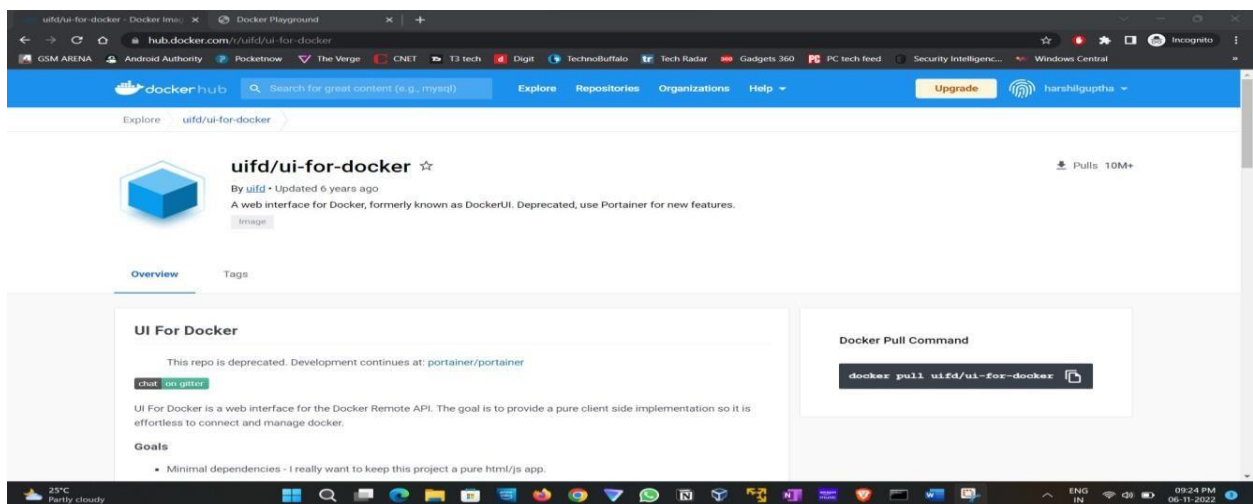
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1. Pull an Image from docker hub and run it in docker playground.

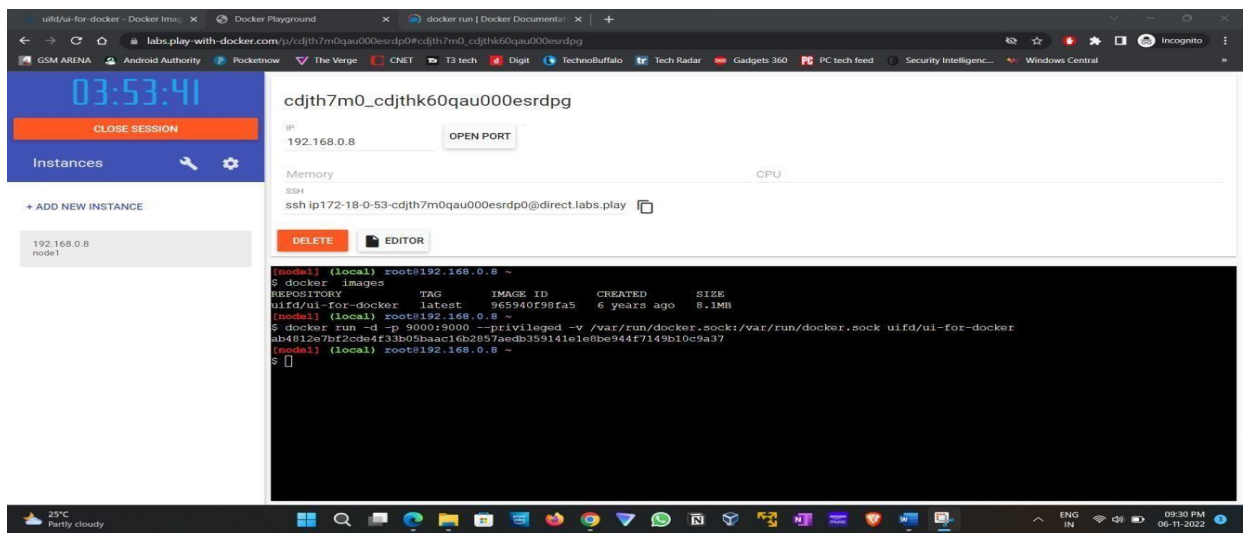
```
docker pull uifd/ui-for-docker
```

```
docker run -d -p 9000:9000 --privileged -v /var/run/docker.sock:/var/run/docker.sock
```

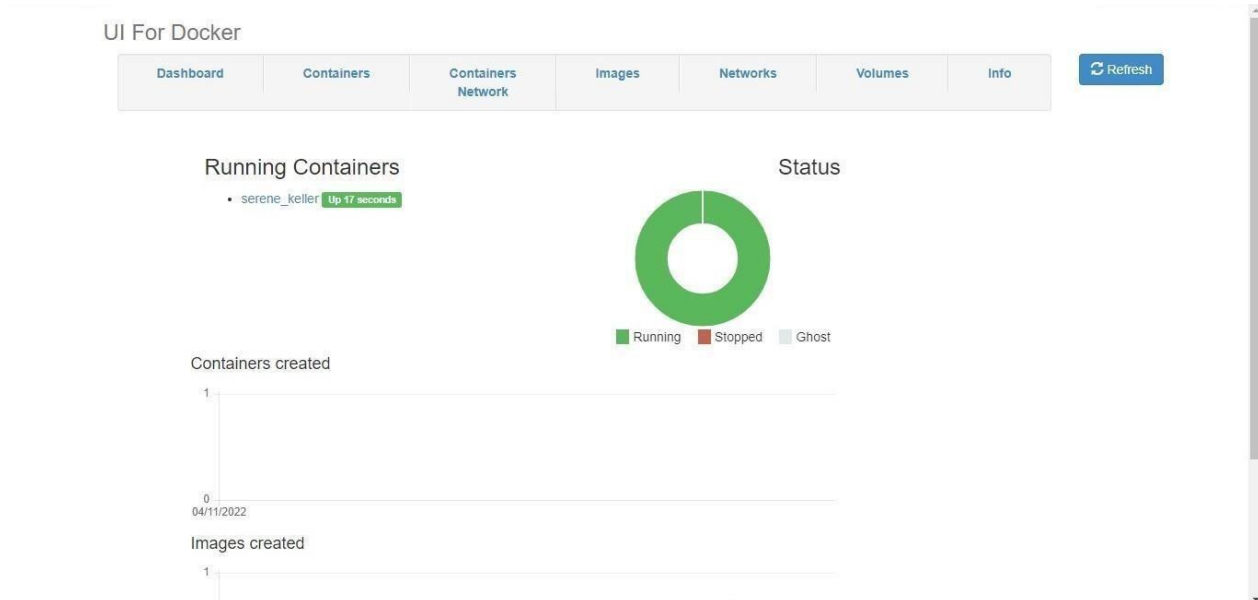
```
uifd/ui-for-docker
```



Docker playground:

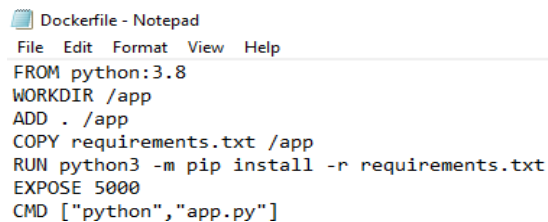


Docker UI:



2. Create a docker file for the job portal application and deploy it in Docker desktop application.

DockerFile



Bulid Docker image

[illegible]

Deploy it on Docker hub

The screenshot shows the Docker Desktop application. The left sidebar contains navigation options: Containers, Images, Volumes, Dev Environments (with a BETA badge), Extensions (with a BETA badge), and Add Extensions. The main panel is titled 'Images on disk' and shows a list of images. The 'LOCAL' tab is selected, displaying a table with one image: 'hello-world' (latest tag, image ID f68fcdce5bb6, created less than a minute ago, size 919.36 MB). A 'Clean up' button is visible in the top right of the main panel.

Below the main panel, a terminal window is open, showing the following commands and output:

```
C:\Windows\System32\cmd.exe
Use 'docker scan' to run Snyk tests against images to find vulnerabilities and learn how to fix them
E:\Study materials\Sem 7\IBM\Exercise\Assignment4>docker images
REPOSITORY    TAG       IMAGE ID       CREATED        SIZE
hello-world   latest    f68fcdce5bb6   5 minutes ago  919MB

E:\Study materials\Sem 7\IBM\Exercise\Assignment4>docker login
Authenticating with existing credentials...
Login Succeeded

Logging in with your password grants your terminal complete access to your account.
For better security, log in with a limited-privilege personal access token. Learn more at https://docs.docker.com/go/access-tokens/

E:\Study materials\Sem 7\IBM\Exercise\Assignment4>docker tag hello-world itsmona14/hello-world

E:\Study materials\Sem 7\IBM\Exercise\Assignment4>docker push itsmona14/hello-world
Using default tag: latest
The push refers to repository [docker.io/itsmona14/hello-world]
373eb5cf4ceb: Pushed
1e505dc1de5e: Pushed
090c85cb75c5: Pushed
ded8299b9f1a: Pushed
1fe0699af9f7: Mounted from library/python
156568a71809: Mounted from library/python
5fca8a9a4d42: Mounted from library/python
6b183c62e3d7: Mounted from library/python
882fd36bfdd5: Mounted from library/python
d1dec9917839: Mounted from library/python
d38adf39e1dd: Mounted from library/python
4ed121b04368: Mounted from library/python
d9d07d703dd5: Mounted from library/python
latest: digest: sha256:46ff91edc98aaa5d7fff51ba708b6498af3c4f64612d9a990bf437497555fd82 size: 3049

E:\Study materials\Sem 7\IBM\Exercise\Assignment4>
```

Tested it using Docker playground

The screenshot shows the Docker Playground interface. On the left, there's a sidebar with a clock showing 03:09:45, a 'CLOSE SESSION' button, and an 'Instances' section with a list of instances. One instance is listed: '192.168.0.13' with a 'node1' label. The main area shows details for a container named 'cdi0ji60_cdi18b63tccg00fmtsog'. It displays the IP address '192.168.0.13', an 'OPEN PORT' button set to '5000', and resource usage: Memory at 27.73% (1.083GiB / 3.906GiB) and CPU at 0.16%. There's an SSH button and a terminal window. The terminal shows the following commands and output:

```
ssh ip172-18-0-40-cdi0ji60qau0008f9u80@direct.labs.play-v
1bd231713cc1: Pull complete
59ebc78c27fb: Pull complete
72f61f026f6a: Pull complete
b8ba28eaa452: Pull complete
Digest: sha256:0036fe1456627bba779e865ba4793212e8332e6835b48c6b5814784adb70c46f
Status: Downloaded newer image for itzmona14/hello-world:latest
docker.io/itzmona14/hello-world:latest
(node1) (local) root@192.168.0.13 ~
$ docker run -p 5000:5000 itzmona14/hello-world
* Serving Flask app 'app'
* Debug mode: off
WARNING: This is a development server. Do not use it in a production deployment. Use a production WSGI server instead.
* Running on all addresses (0.0.0.0)
* Running on http://127.0.0.1:5000
* Running on http://172.17.0.2:5000
Press CTRL+C to quit
172.18.0.1 - - [03/Nov/2022 19:24:35] "GET / HTTP/1.1" 200 -
```

3.Create a IBM container registry and deploy hello world app or job portal app.

My image link: au.icr.io/hello-world-app/hello-world

The screenshot shows a Windows Command Prompt window with the following commands and output:

```
Command Prompt - docker push au.icr.io/hello-world-app/hello-worldapp
C:\Users\Monashree>ibmcloud plugin install container-registry
Looking up 'container-registry' from repository 'IBM Cloud'...
Plug-in 'container-registry[cr] 1.0.2' found in repository 'IBM Cloud'
Attempting to download the binary file...
11:00 MiB / 11:00 MiB [=====] 100.00% 5s
12476416 bytes downloaded
Installing binary...
OK
Plug-in 'container-registry 1.0.2' was successfully installed into C:\Users\Monashree\.bluemix\plugins\container-registry. Use 'ibmcloud plugin show container-registry' to show its details.
C:\Users\Monashree>ibmcloud login -a https://cloud.ibm.com
API endpoint: https://cloud.ibm.com
Email> 2
Password>
Authenticating...
OK
Targeted account: t (302198646cc145ea8bc880cfb0a8d15d)
Select a region (or press enter to skip):
1. au-syd
2. in-che
3. jp-osa
4. jp-tok
5. kr-seo
6. eu-de
7. eu-gb
8. ca-tor
9. us-south
10. us-east
11. br-sao
Enter a number> 9
882fd36bfd35: Pushing [=====] 110.5MB/529MB
d1dec9917839: Pushing [=====] 79.9MB/152MB
API endpoint: https://cloud.ibm.com
09d07d703dd5: Pushing [=====] 67.45MB/124.1MB
d1dec9917839: Pushing [=====] 69.67MB/152MB
```

```
C:\Windows\System32\cmd.exe - docker run -p 5000:5000 au.icr.io/hello-world-app/hello-world

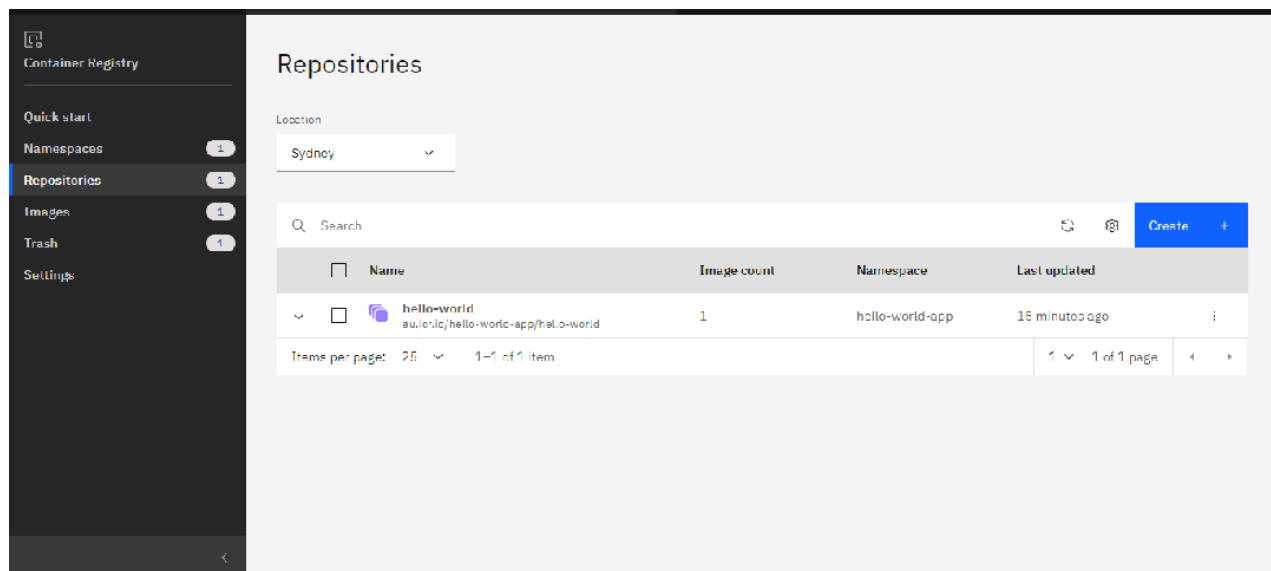
E:\Study materials\Sem 7\IBM\Exercise\Assignment4>docker tag hello-world au.icr.io/hello-world-app/hello-world
E:\Study materials\Sem 7\IBM\Exercise\Assignment4>docker push au.icr.io/hello-world-app/hello-world
Using default tag: latest
The push refers to repository [au.icr.io/hello-world-app/hello-world]
492bcd5cc069: Pushed
006e0938fc5e: Pushed
4bb20ce08724f: Pushed
402dea3c8533: Pushed
f5d161bba139: Pushed
1569e0d95ce6: Pushed
d9e08da15d0c: Pushed
6b183c62e3d7: Mounted from hello-world-app/helloworldapp
882fd36bf6d35: Mounted from hello-world-app/helloworldapp
d1dec9917839: Mounted from hello-world-app/helloworldapp
d38adf39e1dd: Mounted from hello-world-app/helloworldapp
4ad121b04368: Mounted from hello-world-app/helloworldapp
d9d07d702dd5: Mounted from hello-world-app/helloworldapp
latest: digest: sha256:0036fe1456627bba779e865ba4793212e8332e6835b48c6b5814784adb70c46f size: 3049

E:\Study materials\Sem 7\IBM\Exercise\Assignment4>ibmcloud cr image-list
Listing images...

Repository          Tag      Digest          Namespace      Created      Size      Security status
au.icr.io/hello-world-app/hello-world  latest  0036fe145662    hello-world-app  12 minutes ago  356 MB    -

OK

E:\Study materials\Sem 7\IBM\Exercise\Assignment4>docker run -p 5000:5000 au.icr.io/hello-world-app/hello-world
* Serving Flask app 'app'
* Debug mode: off
WARNING: This is a development server. Do not use it in a production deployment. Use a production WSGI server instead.
* Running on all addresses (0.0.0.0)
* Running on http://127.0.0.1:5000
* Running on http://172.17.0.2:5000
Press CTRL+C to quit
172.17.0.1 - - [03/Nov/2022 19:35:58] "GET / HTTP/1.1" 200 -
```



4.Create a Kubernetes cluster in IBM cloud and deploy hello world image or job portal image and also expose the same app to run in node port.

<https://raw.githubusercontent.com/itsmona14/IBM-Assignment-cloud/main/deployment.yaml>

```
apiVersion: v1kind: Service metadata:
  name: hello-world-deploymentspec:
ports:
- port: 5000
  targetPort: 5000selector:
```

```

app: hello-world
---
apiVersion: apps/v1kind: Deployment metadata:
  name: hello-world-deploymentspec:
  replicas: 1selector:
  matchLabels:
    app: hello-worldtemplate:
metadata:labels:
  app: hello-worldspec:
containers:
- name: hello-world
  image: au.icr.io/hello-world-app/hello-worldimagePullPolicy: Always
ports:
- containerPort: 5000

```

The screenshot displays the Kubernetes dashboard interface, divided into two main sections: the top cluster overview and the bottom deployment details.


Cluster Overview (Top Section):

- Cluster Name:** mycluster-free (Status: Normal, Expires in 29 days)
- Node Status:** 1 of 1 Normal
- Add-on Status:** 0 of 0 Normal
- Master Status:** Normal
- Ingress Status:** Unknown
- Details:**
 - Cluster ID: cd1f30c50a6mchav0k1g
 - Version: 1.24.7_1542
 - Infrastructure: Cloudic
 - Zones: Milan 01
 - Created: 04/11/2022, 01:12
 - Resource group: Default
 - Image security enforcement: Enable


Deployment Details (Bottom Section):



- Navigation:** Workloads > Deployments
- Workloads List:** Cron Jobs, Daemon Sets, Deployments (selected), Jobs, Pods, Replica Sets, Replication Controllers, Stateful Sets.
- Service:** Ingresses, Ingress Controllers, Services.
- Config and Storage:** Config Maps.
- CPU Usage Graph:** Shows CPU usage (cores) over time, with a peak around 0.01.
- Memory Usage Graph:** Shows memory usage (bytes) over time, with a peak around 20 Mi.
- Deployments Table:**

Name	Images	Labels	Pods	Created
hello-world-deployment	Show all	-	1 / 1	24 minutes ago


 **kubernetes**

default

 Search

+  

Workloads > Pods > hello-world-deployment-6c75b9c898-p4ntv > Logs

Workloads 

Cron Jobs

Daemon Sets

Deployments

Jobs


Pods

Replica Sets


Replication Controllers

Stateful Sets


Service

Ingresses 




Ingress Classes

Services 

Config and Storage

Logs from hello-world in hello-world-dep... 

```
* Serving Flask app 'app'
* Debug mode: off
WARNING: This is a development server. Do not use it in a production deployment. Use a production WSGI server instead.
* Running on all addresses (0.0.0.0)
* Running on http://127.0.0.1:5000
* Running on http://172.30.82.142:5000
Press CTRL+C to quit
```

Logs from Nov 4, 2022 to Nov 4, 2022 UTC   

au-de.containers.cloud.ibm.com/kubeproxy/clusters/cd1j33f6u6mchav5l6g/...